FIG. 1

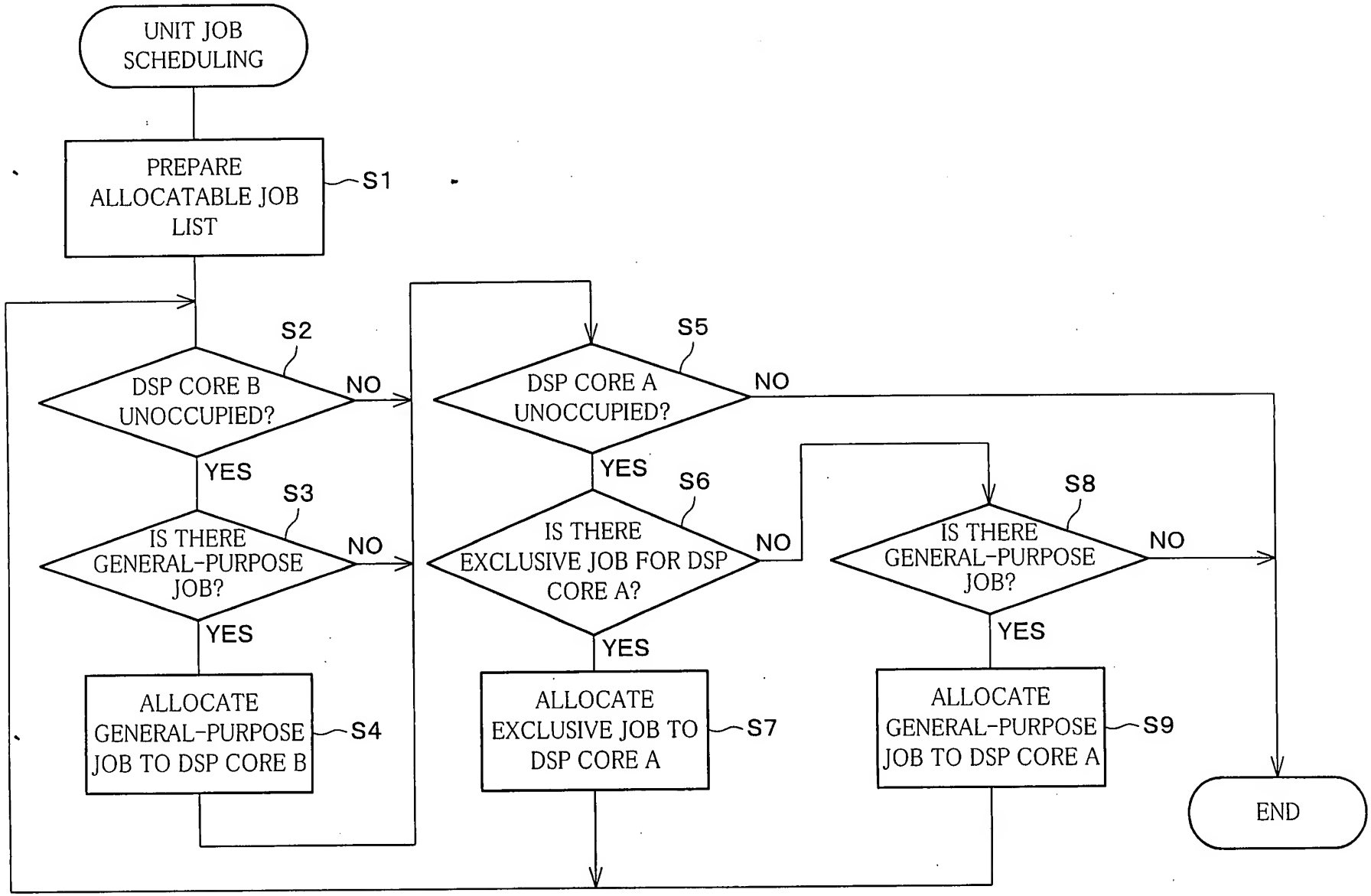

UNIT JOB SCHEDULING
PREPARE ALLOCATABLE JOB LIST
S1
S2
DSP CORE B UNOCCUPIED?
NO
YES
S3
IS THERE GENERAL-PURPOSE JOB?
NO
YES
ALLOCATE GENERAL-PURPOSE JOB TO DSP CORE B
S4
S5
DSP CORE A UNOCCUPIED?
NO
YES
S6
IS THERE EXCLUSIVE JOB FOR DSP CORE A?
NO
YES
ALLOCATE EXCLUSIVE JOB TO DSP CORE A
S7
S8
IS THERE GENERAL-PURPOSE JOB?
NO
YES
ALLOCATE GENERAL-PURPOSE JOB TO DSP CORE A
S9
END

FIG. 2

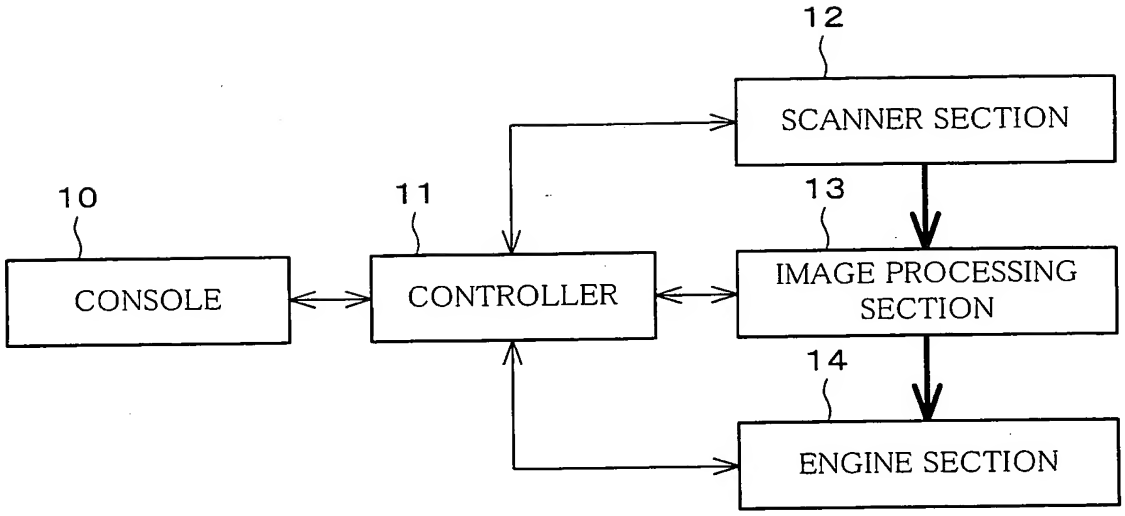

12
SCANNER SECTION
10
11
13
CONSOLE
CONTROLLER
IMAGE PROCESSING SECTION
14
ENGINE SECTION

FIG. 3

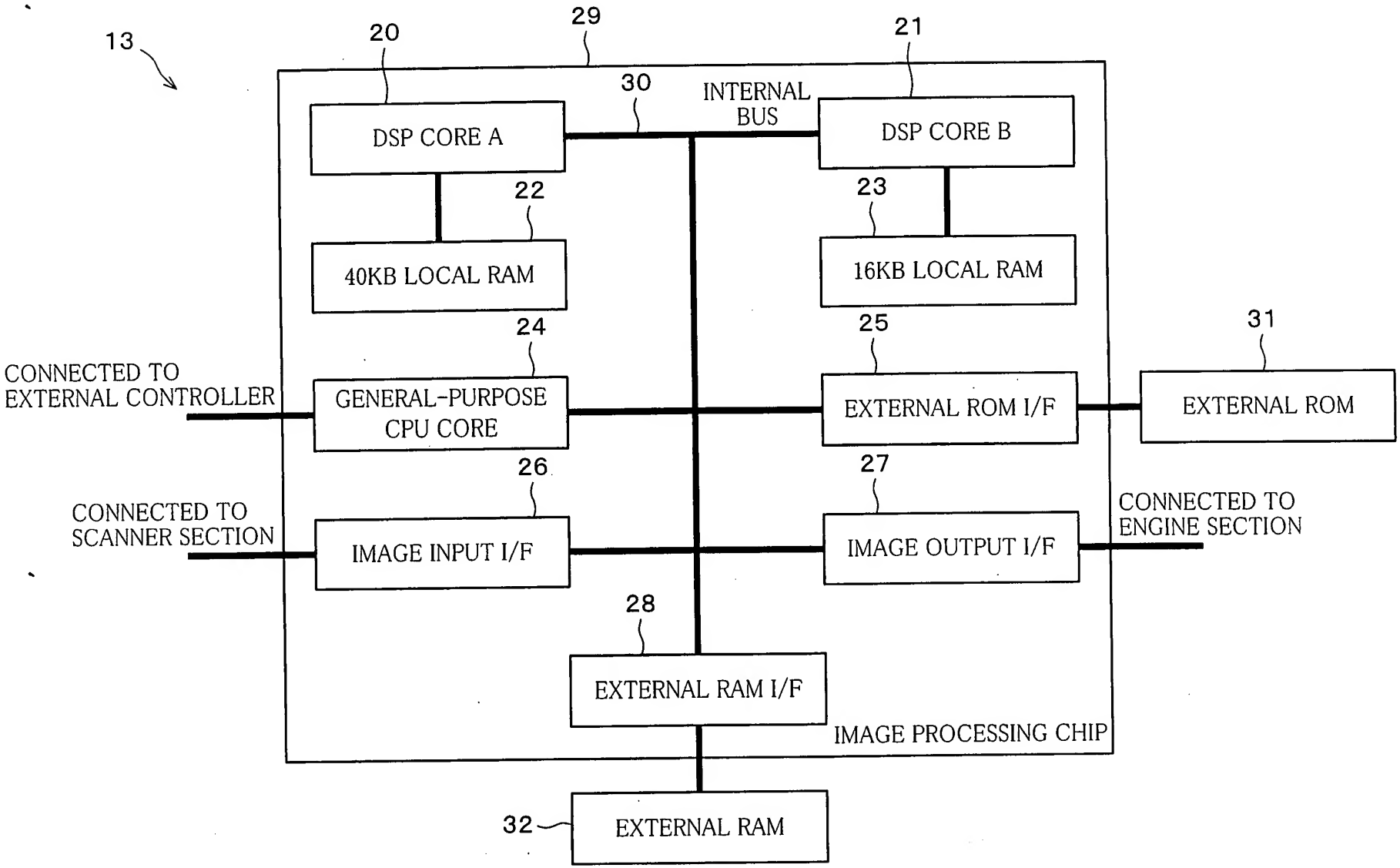

13
20
29
21
30
INTERNAL BUS
DSP CORE A
DSP CORE B
22
23
40KB LOCAL RAM
16KB LOCAL RAM
24
25
31
CONNECTED TO EXTERNAL CONTROLLER
GENERAL-PURPOSE CPU CORE
EXTERNAL ROM I/F
EXTERNAL ROM
26
27
CONNECTED TO SCANNER SECTION
IMAGE INPUT I/F
IMAGE OUTPUT I/F
CONNECTED TO ENGINE SECTION
28
EXTERNAL RAM I/F
IMAGE PROCESSING CHIP
32
EXTERNAL RAM

FIG. 4 (a)

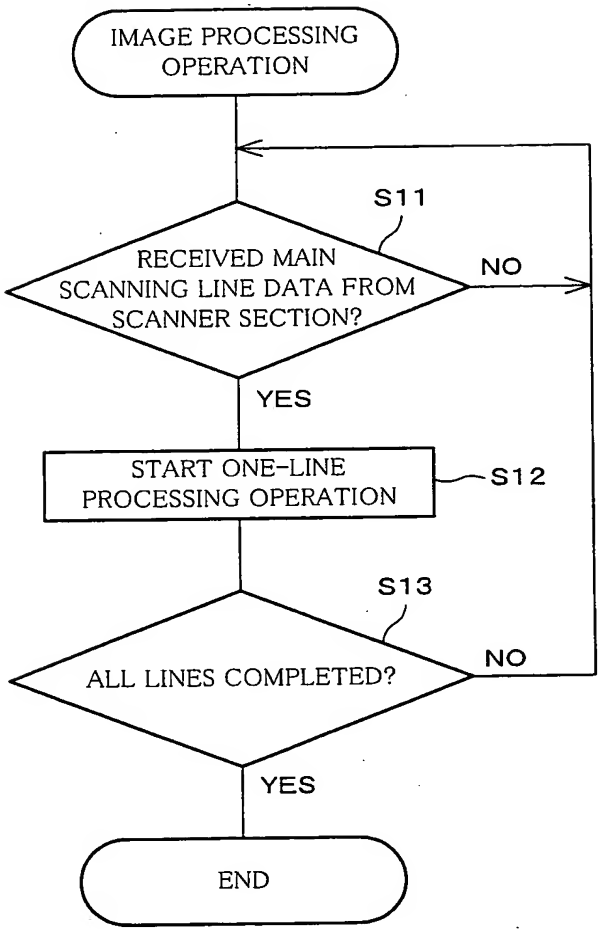


IMAGE PROCESSING OPERATION
S11
RECEIVED MAIN SCANNING LINE DATA FROM SCANNER SECTION?
NO
YES
START ONE-LINE PROCESSING OPERATION
S12
S13
ALL LINES COMPLETED?
NO
YES
END

FIG. 4 (b)

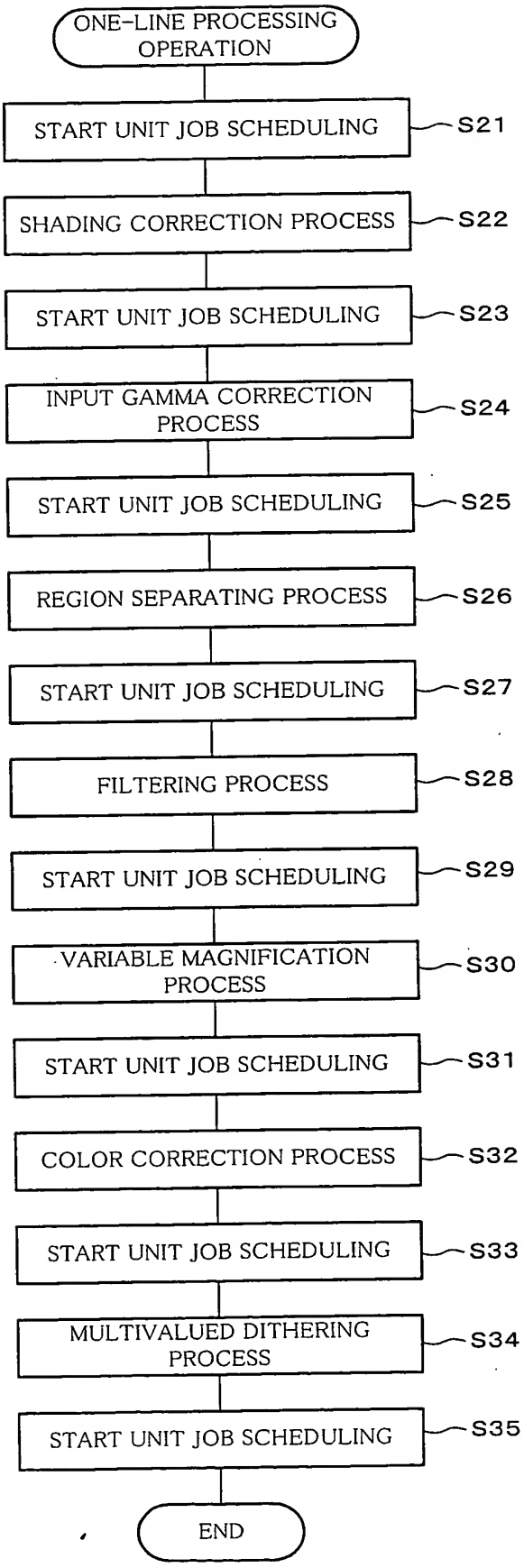

ONE-LINE PROCESSING OPERATION
START UNIT JOB SCHEDULING
S21
SHADING CORRECTION PROCESS
S22
START UNIT JOB SCHEDULING
S23
INPUT GAMMA CORRECTION PROCESS
S24
START UNIT JOB SCHEDULING
S25
REGION SEPARATING PROCESS
S26
START UNIT JOB SCHEDULING
S27
FILTERING PROCESS
S28
START UNIT JOB SCHEDULING
S29
VARIABLE MAGNIFICATION PROCESS
S30
START UNIT JOB SCHEDULING
S31
COLOR CORRECTION PROCESS
S32
START UNIT JOB SCHEDULING
S33
MULTIVALUED DITHERING PROCESS
S34
START UNIT JOB SCHEDULING
S35
END

FIG. 5 (a)

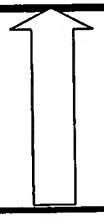
UNIT JOB NAME	TIME UNIT/LINE		EXECUTABLE FOR DSP CORE B 21?	PROCESS THAT SHOULD BE EXECUTED NEXT
	MINIMUM EXECUTION TIME	MAXIMUM EXECUTION TIME		
SHADING CORRECTION PROCESS	5	15	YES	INPUT GAMMA CORRECTION PROCESS
INPUT GAMMA CORRECTION PROCESS	20	35	YES	REGION SEPARATING PROCESS
REGION SEPARATING PROCESS	130	320	YES	FILTERING PROCESS
FILTERING PROCESS	60	160	NO	VARIABLE MAGNIFICATION PROCESS
VARIABLE MAGNIFICATION PROCESS	35	45	YES	COLOR CORRECTION PROCESS
COLOR CORRECTION PROCESS	120	140	NO	MULTIVALUED DITHERING PROCESS
MULTIVALUED DITHERING PROCESS	60	80	YES	NONE

FIG. 5 (b)

	TIME UNIT/LINE
INTERVAL OF RECEIVING MAIN SCANNING LINE DATA	350

FIG. 6

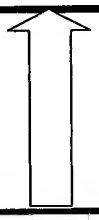
		DSP CORE A	DSP CORE B
JOB CURRENTLY ALLOCATED FOR EXECUTION	NAME	REGION SEPARATING PROCESS	MULTIVALUED DITHERING PROCESS
	TARGET MAIN SCANNING LINE NUMBER	101	100
	ESTIMATED COMPLETION TIME	35720(MIN), 35910(MAX)	35710(MIN), 35730(MAX)
JOB TO BE ALLOCATED NEXT FOR EXECUTION	NAME	UNOCCUPIED	SHADING CORRECTION PROCESS
	TARGET MAIN SCANNING LINE NUMBER		102
	EXECUTION STARTABLE TIME		35700 (UNIT JOB ALLOCATED PERIODICALLY)



LIST OF EXECUTABLE UNIT JOBS	NAME	FILTERING PROCESS	INPUT GAMMA CORRECTION PROCESS
	TARGET MAIN SCANNING LINE NUMBER	101	102
	EXECUTION STARTABLE TIME	35720(MIN), 35910(MAX)	35705(MIN), 35715(MAX)

FIG. 7

		DSP CORE A	DSP CORE B
JOB CURRENTLY ALLOCATED FOR EXECUTION	NAME	REGION SEPARATING PROCESS	SHADING CORRECTION PROCESS
	TARGET MAIN SCANNING LINE NUMBER	200	201
	ESTIMATED COMPLETION TIME	70720(MIN), 70910(MAX)	70730(MIN), 70740(MAX)
JOB TO BE ALLOCATED NEXT FOR EXECUTION	NAME	FILTERING PROCESS	UNOCCUPIED
	TARGET MAIN SCANNING LINE NUMBER	200	
	EXECUTION STARTABLE TIME	70720(MIN), 70910(MAX)	



LIST OF EXECUTABLE UNIT JOBS	NAME	SHADING CORRECTION PROCESS	INPUT GAMMA CORRECTION PROCESS
	TARGET MAIN SCANNING LINE NUMBER	202	201
	EXECUTION STARTABLE TIME	70700 (UNIT JOB ALLOCATED PERIODICALLY)	70730(MIN), 70740(MAX)

FIG. 8

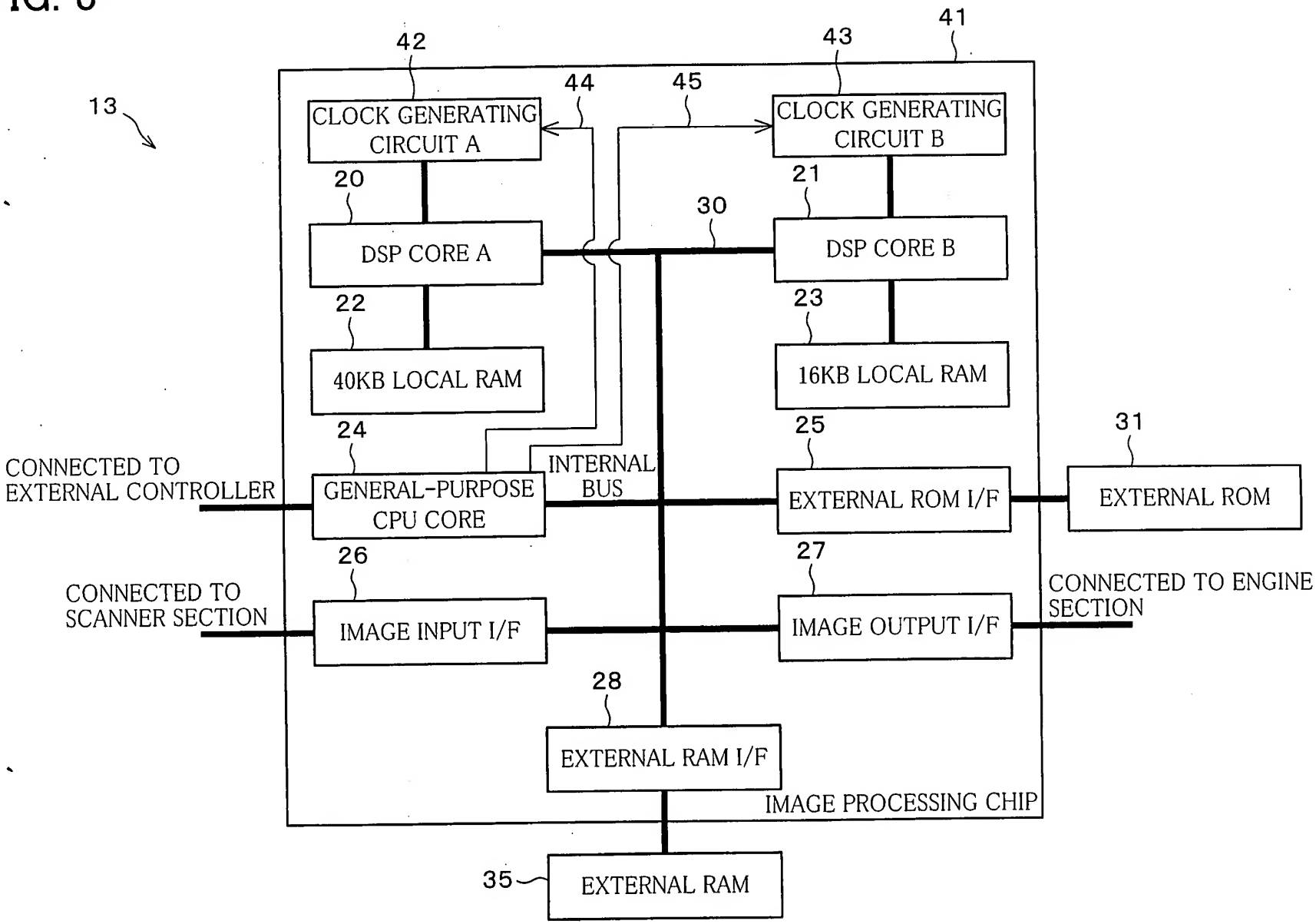

13
41
42
43
44
45
CLOCK GENERATING CIRCUIT A
CLOCK GENERATING CIRCUIT B
20
21
30
DSP CORE A
DSP CORE B
22
23
40KB LOCAL RAM
16KB LOCAL RAM
24
25
31
CONNECTED TO EXTERNAL CONTROLLER
INTERNAL BUS
GENERAL-PURPOSE CPU CORE
EXTERNAL ROM I/F
EXTERNAL ROM
26
27
CONNECTED TO SCANNER SECTION
CONNECTED TO ENGINE SECTION
IMAGE INPUT I/F
IMAGE OUTPUT I/F
28
EXTERNAL RAM I/F
IMAGE PROCESSING CHIP
35
EXTERNAL RAM

FIG. 9 (a)

UNIT JOB NAME	TIME UNIT/LINE						PROCESS THAT SHOULD BE EXECUTED NEXT
	DSP CORE A			DSP CORE B			
	MINIMUM EXECUTION TIME	AVERAGE EXECUTION TIME	MAXIMUM EXECUTION TIME	MINIMUM EXECUTION TIME	AVERAGE EXECUTION TIME	MAXIMUM EXECUTION TIME	
SHADING CORRECTION PROCESS	45	50	55	45	50	55	INPUT GAMMA CORRECTION PROCESS
INPUT GAMMA CORRECTION PROCESS	60	70	75	60	70	75	REGION SEPARATING PROCESS
REGION SEPARATING PROCESS	130	200	320	130	200	320	FILTERING PROCESS
FILTERING PROCESS (FILTERING PROCESS CODE A)	60	120	160	–	–	–	VARIABLE MAGNIFICATION PROCESS
FILTERING PROCESS (FILTERING PROCESS CODE B)	–	–	–	100	200	300	VARIABLE MAGNIFICATION PROCESS
VARIABLE MAGNIFICATION PROCESS	65	70	75	65	70	75	COLOR CORRECTION PROCESS
COLOR CORRECTION PROCESS	180	190	200	–	–	–	MULTIVALUED DITHERING PROCESS
MULTIVALUED DITHERING PROCESS	120	140	160	120	140	160	NONE

FIG. 9 (b)

	TIME UNIT/LINE
INTERVAL OF RECEIVING MAIN SCANNING LINE DATA	500

FIG. 10

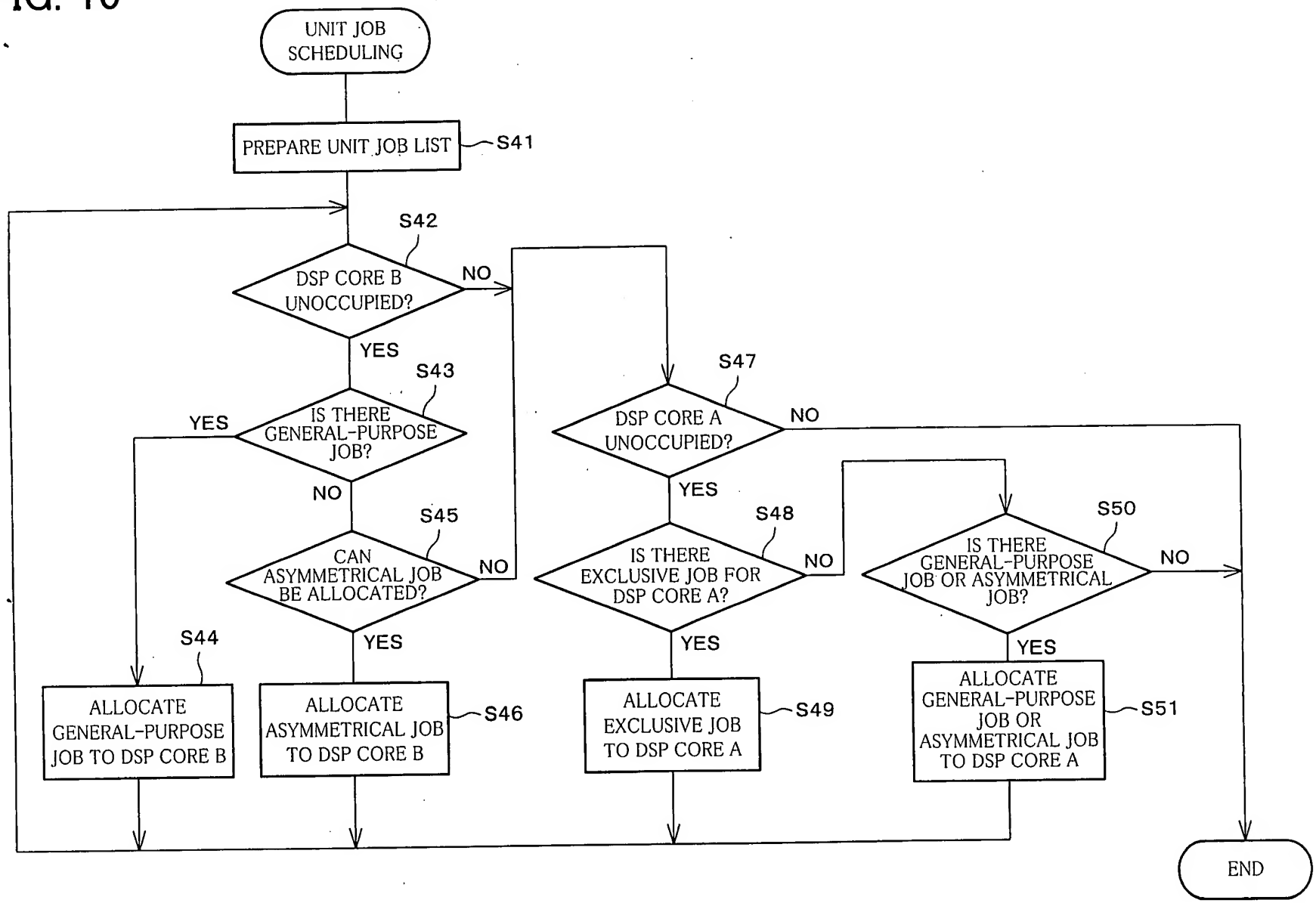

UNIT JOB SCHEDULING
PREPARE UNIT JOB LIST
S41
S42
DSP CORE B UNOCCUPIED?
NO
YES
S43
IS THERE GENERAL-PURPOSE JOB?
YES
NO
S45
CAN ASYMMETRICAL JOB BE ALLOCATED?
NO
YES
S44
ALLOCATE GENERAL-PURPOSE JOB TO DSP CORE B
ALLOCATE ASYMMETRICAL JOB TO DSP CORE B
S46
S47
DSP CORE A UNOCCUPIED?
NO
YES
S48
IS THERE EXCLUSIVE JOB FOR DSP CORE A?
NO
YES
S49
ALLOCATE EXCLUSIVE JOB TO DSP CORE A
S50
IS THERE GENERAL-PURPOSE JOB OR ASYMMETRICAL JOB?
NO
YES
ALLOCATE GENERAL-PURPOSE JOB OR ASYMMETRICAL JOB TO DSP CORE A
S51
END

FIG. 11

		DSP CORE A	DSP CORE B
JOB CURRENTLY ALLOCATED FOR EXECUTION	NAME	COLOR CORRECTION PROCESS	REGION SEPARATING PROCESS
	TARGET MAIN SCANNING LINE NUMBER	99	100
	ESTIMATED COMPLETION TIME	50220(MIN), 50230(TYP), 50240(MAX)	50180(MIN), 50250(TYP), 50370(MAX)
JOB TO BE ALLOCATED NEXT FOR EXECUTION	NAME	MULTIVALUED DITHERING PROCESS	UNOCCUPIED
	TARGET MAIN SCANNING LINE NUMBER	99	
	EXECUTION STARTABLE TIME	50220(MIN), 50230(TYP), 50240(MAX)	
	ESTIMATED COMPLETION TIME	50340(MIN), 50370(TYP), 50400(MAX)	

LIST OF EXECUTABLE UNIT JOBS	NAME	FILTERING PROCESS
	TARGET MAIN SCANNING LINE NUMBER	100
	EXECUTION STARTABLE TIME	50180(MIN), 50250(TYP), 50370(MAX)
LIST OF SCHEDULED UNIT JOBS	NAME	SHADING CORRECTION PROCESS
	TARGET MAIN SCANNING LINE NUMBER	101
	EXECUTION STARTABLE TIME	50500 (UNIT JOB ALLOCATED PERIODICALLY)

FIG. 12 (a)

UNIT JOB NAME	TIME UNIT/LINE								PROCESS THAT SHOULD BE EXECUTED NEXT
	DSP CORE A				DSP CORE B				
	MINIMUM EXECUTION TIME	AVERAGE EXECUTION TIME	MAXIMUM EXECUTION TIME	AVERAGE POWER CONSUMPTION INDEX	MINIMUM EXECUTION TIME	AVERAGE EXECUTION TIME	MAXIMUM EXECUTION TIME	AVERAGE POWER CONSUMPTION INDEX	
SHADING CORRECTION PROCESS	45	50	55	60	45	50	55	40	INPUT GAMMA CORRECTION PROCESS
INPUT GAMMA CORRECTION PROCESS	60	70	75	80	60	70	75	50	REGION SEPARATING PROCESS
REGION SEPARATING PROCESS	130	200	320	270	130	200	320	180	FILTERING PROCESS
FILTERING PROCESS (FILTERING PROCESS CODE A)	60	120	160	140	–	–	–	–	VARIABLE MAGNIFICATION PROCESS
FILTERING PROCESS (FILTERING PROCESS CODE B)	–	–	–	–	100	200	300	160	VARIABLE MAGNIFICATION PROCESS
VARIABLE MAGNIFICATION PROCESS	65	70	75	80	65	70	75	60	COLOR CORRECTION PROCESS
COLOR CORRECTION PROCESS	180	190	200	220	–	–	–	–	MULTIVALUED DITHERING PROCESS
MULTIVALUED DITHERING PROCESS	120	140	160	170	120	140	160	110	NONE

FIG. 12 (b)

	TIME UNIT/LINE
INTERVAL OF RECEIVING MAIN SCANNING LINE DATA	500

FIG. 13

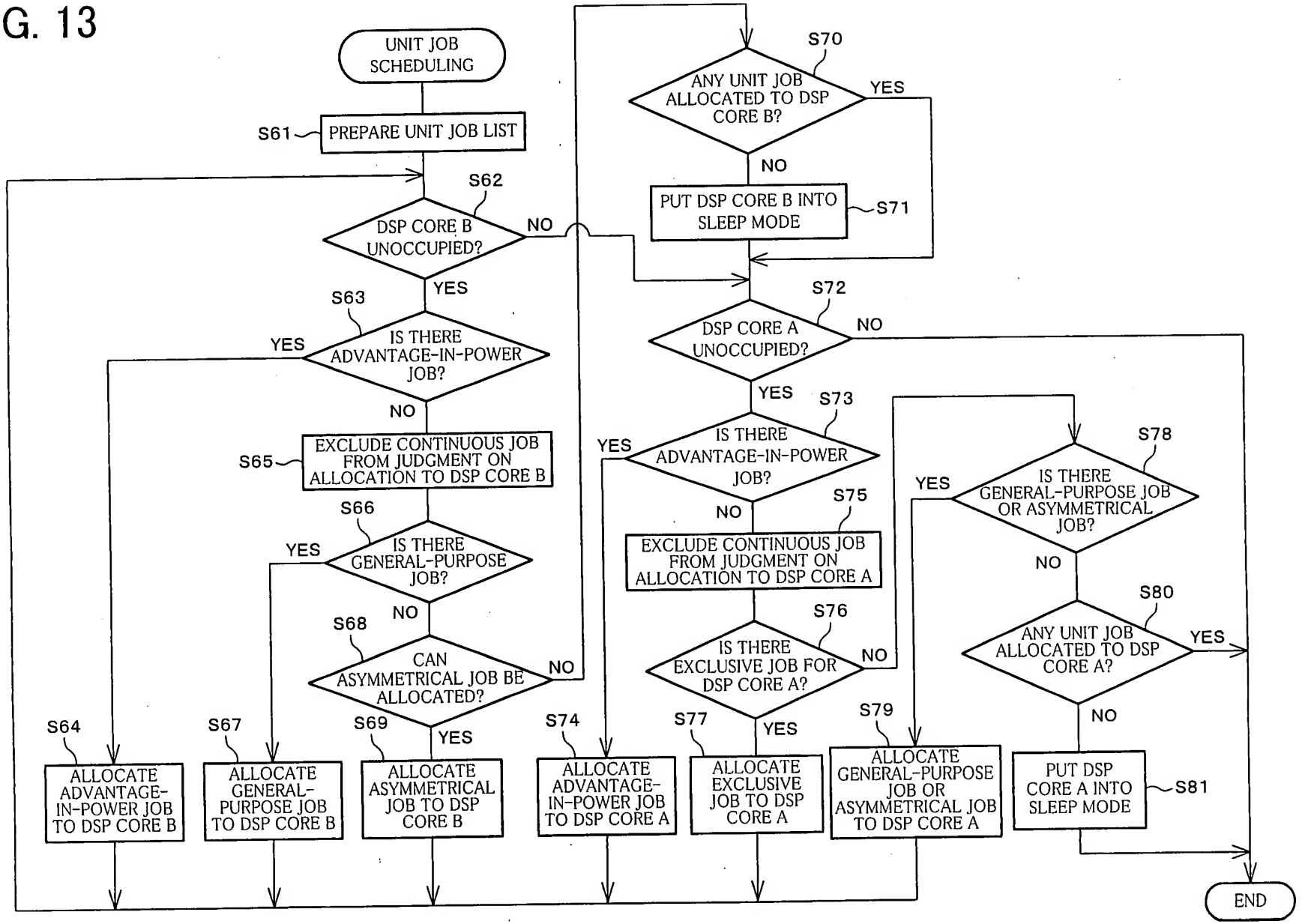

UNIT JOB SCHEDULING
S61
PREPARE UNIT JOB LIST
S62
DSP CORE B UNOCCUPIED?
NO
YES
S63
IS THERE ADVANTAGE-IN-POWER JOB?
YES
NO
S65
EXCLUDE CONTINUOUS JOB FROM JUDGMENT ON ALLOCATION TO DSP CORE B
S66
IS THERE GENERAL-PURPOSE JOB?
YES
NO
S68
CAN ASYMMETRICAL JOB BE ALLOCATED?
NO
YES
S64
ALLOCATE ADVANTAGE-IN-POWER JOB TO DSP CORE B
S67
ALLOCATE GENERAL-PURPOSE JOB TO DSP CORE B
S69
ALLOCATE ASYMMETRICAL JOB TO DSP CORE B
S70
ANY UNIT JOB ALLOCATED TO DSP CORE B?
YES
NO
PUT DSP CORE B INTO SLEEP MODE
S71
S72
DSP CORE A UNOCCUPIED?
NO
YES
S73
IS THERE ADVANTAGE-IN-POWER JOB?
YES
NO
S75
EXCLUDE CONTINUOUS JOB FROM JUDGMENT ON ALLOCATION TO DSP CORE A
S76
IS THERE EXCLUSIVE JOB FOR DSP CORE A?
NO
YES
S74
ALLOCATE ADVANTAGE-IN-POWER JOB TO DSP CORE A
S77
ALLOCATE EXCLUSIVE JOB TO DSP CORE A
S78
IS THERE GENERAL-PURPOSE JOB OR ASYMMETRICAL JOB?
YES
NO
S80
ANY UNIT JOB ALLOCATED TO DSP CORE A?
YES
NO
S79
ALLOCATE GENERAL-PURPOSE JOB OR ASYMMETRICAL JOB TO DSP CORE A
PUT DSP CORE A INTO SLEEP MODE
S81
END

FIG. 14

		DSP CORE A	DSP CORE B
JOB CURRENTLY ALLOCATED FOR EXECUTION	NAME	SHADING CORRECTION PROCESS	REGION SEPARATING PROCESS
	TARGET MAIN SCANNING LINE NUMBER	150	149
	ESTIMATED COMPLETION TIME	75045(MIN), 75050(TYP), 75055(MAX)	75140(MIN), 75210(TYP), 75330(MAX)
JOB TO BE ALLOCATED NEXT FOR EXECUTION	NAME	INPUT GAMMA PROCESS	UNOCCUPIED
	TARGET MAIN SCANNING LINE NUMBER	150	
	EXECUTION STARTABLE TIME	75045(MIN), 75050(TYP), 75055(MAX)	
	ESTIMATED COMPLETION TIME	75105(MIN), 75120(TYP), 75130(MAX)	

LIST OF EXECUTABLE UNIT JOBS	NAME	FILTERING PROCESS	REGION SEPARATING PROCESS
	TARGET MAIN SCANNING LINE NUMBER	149	150
	EXECUTION STARTABLE TIME	50180(MIN), 50250(TYP), 50370(MAX)	75045(MIN), 75050(TYP), 75055(MAX)
LIST OF SCHEDULED UNIT JOBS	NAME	SHADING CORRECTION PROCESS	
	TARGET MAIN SCANNING LINE NUMBER	151	
	EXECUTION STARTABLE TIME	75500 (UNIT JOB ALLOCATED PERIODICALLY)	